

Relationships between maternal characteristics and infant birth weight

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Abstract

Purpose – Nowadays, the importance of infant birth weight (IBW) as a key factor in determining the future of physical and mental development of children is a growing concern. The purpose of this paper is to investigate the relationship between maternal characteristics and IBW among pregnant women who were referred to health centers in Qazvin city in the year 2016.

Design/methodology/approach – A descriptive-analytical study was conducted among pregnant women in 28–36 weeks of gestation who referred to healthcare centers and facilities affiliated by the Qazvin University of Medical Sciences in April–June 2016. The associations between maternal physical activity, mothers' socioeconomic status and birth weight were examined by SPSS Software Package version 16 through linear and logistic regression tests.

Findings – Linear regression modeling suggested that maternal weight ($p < 0.001$), income ($p < 0.04$), gestational age of delivery ($p < 0.00$) and pre-pregnancy BMI ($p < 0.02$) were positively associated with birth weight, while occupational and heavy physical activity ($p < 0.003$ and 0.008 , respectively) were negatively associated with IBW. In this study, low birth weight infants are compared to those with normal weight belonged to mothers who have spent more time in doing heavy physical activities (OR 1.11 , 95% CI 1.01 – 1.23). Also infants with low birth weight compared to others in the normal weight category were born from mothers with lower pre-pregnancy BMI (OR 0.65 , 95% CI 0.62 – 0.78), gestational age of delivery (OR 0.82 , 95% CI 0.79 – 0.86), maternal weight (OR 0.86 , 95% CI 0.84 – 0.88) and income (OR 0.79 , 95% CI 0.69 – 0.83).

Practical implications – The study findings revealed that certain maternal characteristics could play a significant role in IBW. Despite the importance, in most of developing countries (particularly Iran), future mothers are not advised about an appropriate weight gain during pregnancy or the optimal level of physical activity in such a period of time. Therefore, counseling pregnant women and giving them proper information on appropriate perinatal care would be helpful in order to have pregnancies with optimal outcomes.

Originality/value – The authors applied several statistical methods to analyze IBW among mothers with different maternal characteristics and predict birth weight based on contributing factors.

Keywords Physical activity, Socioeconomic factors, Birth weight, Maternal characteristics

Paper type Research paper